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<110> Reinherz, Ellis L.
Clayton, Linda K.
Fiorini, Emma
Reche, Pedro A.
Schmitz, Ingo

<120> IDENTIFICATION OF THE IKBNS PROTEIN AND
ITS PRODUCTS

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<141> 2004-02-20

<150> PCT/US02/08288

<151> 2002-03-14

<150> US 60/314,046

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<151> 2001-09-18

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| aaaaaaaccc | aaacccatt | ctcatacccg | ctccacagcc | tctgctctgg | cctctgcaat | 11940 |
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| gcactcatca | ccatgcctga | ctaatttttt | ttttgtaaag | actgtgtctc | actatgttgc | 14820 |
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| tgggattaca | ggcatgagcc | acgcacatgg | tagaaactga | attattataa | gaaaaattgg | 14940 |

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<211> 328

<212> PRT

<213> Homo sapiens

<400> 2

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 20           25           30
Phe Pro Ala Val Val Pro Gly Pro Ser Leu Glu Val Ala Arg Ala His
 35           40           45
Met Leu Ala Leu Gly Pro Gln Gln Leu Leu Ala Gln Asp Glu Glu Gly
 50           55           60
Asp Thr Leu Leu His Leu Phe Ala Ala Arg Gly Leu Arg Trp Ala Ala
 65           70           75           80
Tyr Ala Ala Ala Glu Val Leu Gln Val Tyr Arg Arg Leu Asp Ile Arg
 85           90           95
Glu His Lys Gly Lys Thr Pro Leu Leu Val Ala Ala Ala Ala Asn Gln
100           105           110
Pro Leu Ile Val Glu Asp Leu Leu Asn Leu Gly Ala Glu Pro Asn Ala
115           120           125
Ala Asp His Gln Gly Arg Ser Val Leu His Val Ala Ala Thr Tyr Gly
130           135           140
Leu Pro Gly Val Leu Leu Ala Val Leu Asn Ser Gly Val Gln Val Asp
145           150           155           160
Leu Glu Ala Arg Asp Phe Glu Gly Leu Thr Pro Leu His Thr Ala Ile
165           170           175
Leu Ala Leu Asn Val Ala Met Arg Pro Ser Asp Leu Cys Pro Arg Val
180           185           190
Leu Ser Thr Gln Ala Arg Asp Arg Leu Asp Cys Val His Met Leu Leu
195           200           205
Gln Met Gly Ala Asn His Thr Ser Gln Glu Ile Lys Ser Asn Lys Thr
210           215           220
Val Leu His Leu Ala Val Gln Ala Ala Asn Pro Thr Leu Val Gln Leu
225           230           235           240
Leu Leu Glu Leu Pro Arg Gly Asp Leu Arg Thr Phe Val Asn Met Lys
245           250           255           260
Ala His Gly Asn Thr Ala Leu His Met Ala Ala Ala Leu Pro Pro Gly
260           265           270
Pro Ala Gln Glu Ala Ile Val Arg His Leu Leu Ala Ala Gly Ala Asp
275           280           285
Pro Thr Leu Arg Asn Leu Glu Asn Glu Gln Pro Val His Leu Leu Arg
290           295           300
Pro Gly Pro Gly Pro Glu Asp Leu Arg Gln Leu Leu Lys Arg Ser Arg
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Val Ala Pro Pro Gly Leu Ser Ser
325

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<211> 2046

<212> DNA
<213> Unknown

<220>
<223> mouse

<400> 3

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<210> 4
<211> 607
<212> PRT
<213> Unknown

<220>
<223> mouse

<400> 4

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Met Glu Asp Ser Leu Asp Thr Arg Leu Tyr Pro Glu Pro Ser Leu Ser
1           5           10          15
Gln Val Gly Ser Trp Arg Val Ser Ser Leu Pro Ser Gly Ser Pro Gln
20          25          30
Leu Pro Ser Pro Thr Gly Pro Ser Leu Glu Thr Ala Arg Ala His Ile

```

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | | 35 | | | | | 40 | | | | 45 | | | | |
| Leu | Ala | Leu | Gly | Pro | Gln | Gln | Leu | Leu | Ala | Gln | Met | Glu | Asp | Asp | Thr |
| | 50 | | | | | 55 | | | | | 60 | | | | |
| Tyr | Ser | Leu | Gln | Gly | Trp | Arg | Val | Ser | Pro | Ser | Gly | Pro | Gln | Pro | Gly |
| 65 | | | | | 70 | | | | | 75 | | | | | 80 |
| Pro | Ser | Leu | Glu | Ala | Arg | Ala | His | Leu | Ala | Leu | Gly | Pro | Gln | Gln | Leu |
| | | | | 85 | | | | | 90 | | | | | 95 | |
| Leu | Ala | Gln | Asp | Glu | Glu | Gly | Asp | Thr | Leu | Leu | His | Leu | Phe | Ala | Ala |
| | | | 100 | | | | | 105 | | | | | 110 | | |
| Arg | Gly | Leu | Arg | Trp | Ala | Ala | Tyr | Ala | Ala | Ala | Glu | Val | Leu | Gln | Met |
| | | 115 | | | | | 120 | | | | | 125 | | | |
| Tyr | Arg | Gln | Leu | Asp | Ile | Arg | Glu | His | Lys | Gly | Lys | Thr | Pro | Leu | Leu |
| 130 | | | | | | 135 | | | | | 140 | | | | |
| Val | Ala | Ala | Ala | Ala | Asn | Gln | Pro | Leu | Ile | Val | Glu | Asp | Leu | Leu | Asp |
| 145 | | | | | 150 | | | | | 155 | | | | | 160 |
| Glu | Glu | Gly | Asp | Thr | Leu | Leu | His | Leu | Phe | Ala | Ala | Arg | Gly | Leu | Arg |
| | | | 165 | | | | | | 170 | | | | | 175 | |
| Trp | Ala | Ala | Tyr | Ala | Ala | Ala | Glu | Val | Leu | Gln | Tyr | Arg | Leu | Asp | Ile |
| | | | 180 | | | | | 185 | | | | | 190 | | |
| Arg | Glu | His | Lys | Gly | Lys | Thr | Pro | Leu | Leu | Val | Ala | Ala | Ala | Ala | Asn |
| | | 195 | | | | | 200 | | | | | 205 | | | |
| Gln | Pro | Leu | Ile | Val | Glu | Asp | Leu | Leu | Ser | Leu | Gly | Ala | Glu | Pro | Asn |
| | 210 | | | | | 215 | | | | | 220 | | | | |
| Ala | Thr | Asp | His | Gln | Gly | Arg | Ser | Val | Leu | His | Val | Ala | Ala | Thr | Tyr |
| 225 | | | | 230 | | | | | | 235 | | | | | 240 |
| Gly | Leu | Pro | Gly | Val | Leu | Ser | Ala | Val | Phe | Lys | Ser | Gly | Ile | Gln | Val |
| | | | 245 | | | | | | 250 | | | | | 255 | |
| Asp | Leu | Glu | Ala | Arg | Asp | Phe | Glu | Gly | Leu | Thr | Pro | Leu | His | Thr | Ala |
| | | | 260 | | | | | 265 | | | | | 270 | | |
| Val | Leu | Ala | Leu | Asn | Leu | Gly | Ala | Glu | Pro | Asn | Ala | Asp | His | Gln | Gly |
| | | 275 | | | | | 280 | | | | | 285 | | | |
| Arg | Ser | Val | Leu | His | Val | Ala | Ala | Thr | Tyr | Gly | Leu | Pro | Gly | Val | Leu |
| | 290 | | | | | 295 | | | | | 300 | | | | |
| Ala | Val | Ser | Gly | Gln | Val | Asp | Leu | Glu | Ala | Arg | Asp | Phe | Glu | Gly | Leu |
| 305 | | | | 310 | | | | | | 315 | | | | | 320 |
| Thr | Pro | Leu | His | Thr | Ala | Leu | Ala | Leu | Asn | Ala | Ala | Met | Leu | Pro | Ala |
| | | | | 325 | | | | | 330 | | | | | 335 | |
| Ser | Val | Cys | Pro | Arg | Met | Gln | Asn | Ser | Gln | Ala | Arg | Asp | Arg | Leu | Thr |
| | | | 340 | | | | | 345 | | | | | 350 | | |
| Cys | Val | Gln | Met | Leu | Leu | Gln | Met | Gly | Ala | Ser | His | Thr | Ser | Gln | Glu |
| | | 355 | | | | | 360 | | | | | 365 | | | |
| Ile | Lys | Ser | Asn | Lys | Thr | Ile | Leu | His | Leu | Ala | Val | Gln | Ala | Ala | Asn |
| | 370 | | | | | 375 | | | | | 380 | | | | |
| Pro | Thr | Leu | Val | Gln | Leu | Ala | Met | Pro | Cys | Pro | Arg | Gln | Ala | Arg | Asp |
| 385 | | | | 390 | | | | | | 395 | | | | | 400 |
| Arg | Leu | Cys | Val | Met | Leu | Leu | Gln | Met | Gly | Ala | His | Thr | Ser | Gln | Glu |
| | | | 405 | | | | | | 410 | | | | | 415 | |
| Ile | Lys | Ser | Asn | Lys | Thr | Leu | His | Leu | Ala | Val | Gln | Ala | Ala | Asn | Pro |
| | | | 420 | | | | | 425 | | | | | 430 | | |
| Thr | Leu | Val | Gln | Leu | Leu | Leu | Gly | Leu | Pro | Arg | Gly | Asp | Leu | Arg | Ala |
| | | 435 | | | | | 440 | | | | | 445 | | | |
| Phe | Val | Asn | Met | Lys | Ala | His | Gly | Asn | Thr | Ala | Leu | His | Met | Ala | Ala |
| | 450 | | | | | 455 | | | | | 460 | | | | |
| Ala | Leu | Pro | Pro | Gly | Pro | Pro | Gln | Glu | Ala | Ile | Val | Arg | His | Leu | Leu |
| 465 | | | | | 470 | | | | | 475 | | | | | 480 |
| Ala | Ala | Gly | Ala | Asp | Pro | Thr | Leu | Arg | Asn | Leu | Glu | Asn | Glu | Gln | Pro |
| | | | 485 | | | | | | 490 | | | | | 495 | |

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| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Leu | Leu | Leu | Pro | Arg | Gly | Asp | Leu | Arg | Phe | Val | Asn | Met | Lys | Ala |
| | | | 500 | | | | | 505 | | | | | 510 | | |
| His | Gly | Asn | Thr | Ala | Leu | His | Met | Ala | Ala | Ala | Leu | Pro | Pro | Gly | Pro |
| | | 515 | | | | | 520 | | | | | 525 | | | |
| Gln | Glu | Ala | Ile | Val | Arg | His | Leu | Leu | Ala | Ala | Gly | Ala | Asp | Pro | Thr |
| | | 530 | | | | 535 | | | | | 540 | | | | |
| Leu | Arg | Asn | Leu | Glu | Gly | Glu | Gln | Pro | Val | His | Leu | Leu | Arg | Pro | Gly |
| 545 | | | | | 550 | | | | | 555 | | | | | 560 |
| Gly | Pro | Glu | Gly | Leu | Arg | Gln | Leu | Leu | Lys | Arg | Ser | Arg | Thr | Ala | Pro |
| | | | | 565 | | | | | 570 | | | | | 575 | |
| Pro | Gly | Leu | Ser | Ser | His | Leu | Leu | Arg | Pro | Gly | Gly | Pro | Glu | Gly | Leu |
| | | | 580 | | | | | 585 | | | | | 590 | | |
| Arg | Gln | Leu | Leu | Lys | Arg | Ser | Arg | Ala | Pro | Pro | Gly | Leu | Ser | Ser | |
| | | 595 | | | | | 600 | | | | | 605 | | | |

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<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> motif

<221> VARIANT

<222> 5

<223> Xaa = Asp, Gly or Glu

<400> 5

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<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> oligonucleotide

<400> 6

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<211> 21

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<220>

<223> oligonucleotide

<400> 7

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21

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<210> 8
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<220>
 <223> Murine

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 35 40 45
 Leu Ala Asn Ile Pro Gln Asp Gln Phe Leu Ala Arg Asp Gly Asp Gly
 50 55 60
 Asp Thr Phe Leu His Ile Ala Val Ala Gln Gly Arg Arg Ala Leu Ser
 65 70 75 80
 Tyr Val Leu Ala Arg Lys Met Asn Ala Leu His Met Leu Asp Ile Lys
 85 90 95
 Glu His Asn Gly Gln Ser Ala Phe Gln Val Ala Val Ala Ala Asn Gln
 100 105 110
 His Leu Ile Val Gln Asp Leu Val Asn Leu Gly Ala Gln Val Asn Thr
 115 120 125
 Thr Asp Cys Trp Gly Arg Thr Pro Leu His Val Cys Ala Glu Lys Gly
 130 135 140
 His Ser Gln Val Leu Gln Ala Ile Gln Lys Gly Ala Val Arg Ser Asn
 145 150 155 160
 Gln Phe Val Asp Leu Glu Ala Thr Asn Tyr Asp Gly Leu Thr Pro Leu
 165 170 175
 His Cys Ala Val Val Ala His Asn Ala Val Val His Glu Leu Gln Arg
 180 185 190
 Asn Arg Gln Ser His Ser Pro Glu Val Gln Asp Leu Leu Leu Arg Asn
 195 200 205
 Lys Ser Leu Val Asp Thr Ile Lys Gln Leu Ile Gln Met Gly Ala Ala
 210 215 220
 Val Glu Ala Lys Asp Arg Lys Ser Gly Arg Thr Ala Leu His Leu Ala
 225 230 235 240
 Ala Glu Glu Ala Asn Leu Glu Leu Ile Pro Leu Phe Leu Glu Leu Pro
 245 250 255
 Ser Cys Leu Ser Phe Val Asn Ala Lys Ala Tyr Asn Gly Asn Thr Ala
 260 265 270
 Leu His Val Ala Ala Ser Leu Gln Tyr Arg Val Thr Gln Leu Asp Ala
 275 280 285
 Val Arg Leu Leu Met Arg Lys Gly Ala Asp Pro Ser Thr Arg Asn Leu
 290 295 300
 Glu Asn Glu Gln Pro Val His Leu Val Pro Asp Gly Pro Val Gly Glu
 305 310 315 320
 Gln Ile Arg Arg Ile Leu Lys Gly Lys Ser Ile Gln Gln Arg Ala Pro
 325 330 335
 Pro Tyr

<210> 9
 <211> 248

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<212> PRT

<213> Homo sapiens

<400> 9

```

Met Ala Thr Arg Ala Asp Glu Asp Gly Asp Thr Pro Leu His Ile Ala
 1      5      10
Val Val Gln Gly Asn Leu Pro Ala Val His Arg Leu Val Asn Leu Phe
      20      25      30
Gln Gln Gly Gly Arg Glu Leu Asp Ile Tyr Asn Asn Leu Arg Gln Thr
      35      40      45
Pro Leu His Leu Ala Val Ile Thr Thr Leu Pro Ser Val Val Arg Leu
      50      55      60
Leu Val Thr Ala Gly Ala Ser Pro Met Ala Leu Asp Arg His Gly Gln
      65      70      75      80
Thr Ala Ala His Leu Ala Cys Glu His Arg Ser Pro Thr Cys Leu Pro
      85      90      95
Ala Leu Leu Asp Ser Ala Ala Pro Gly Thr Leu Asp Leu Glu Ala Arg
      100      105      110
Asn Tyr Asp Gly Leu Thr Ala Leu His Val Ala Val Asn Thr Glu Cys
      115      120      125
Gln Glu Thr Val Gln Leu Leu Leu Glu Arg Gly Ala Asp Ile Asp Ala
      130      135      140
Val Asp Ile Lys Ser Gly Arg Ser Pro Leu Ile His Ala Val Glu Asn
      145      150      155      160
Asn Ser Leu Ser Met Val Gln Leu Leu Leu Gln His Gly Ala Asn Val
      165      170      175
Asn Ala Gln Met Tyr Ser Gly Ser Ser Ala Leu His Ser Ala Ser Gly
      180      185      190
Arg Gly Leu Leu Pro Leu Val Arg Thr Leu Val Arg Ser Gly Ala Asp
      195      200      205
Ser Ser Leu Lys Asn Cys His Asn Asp Thr Pro Leu Met Val Ala Arg
      210      215      220
Ser Arg Arg Val Ile Asp Ile Leu Arg Gly Lys Ala Thr Arg Pro Ala
      225      230      235      240
Ser Thr Ser Gln Pro Asp Pro Ser
      245

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<210> 10

<211> 239

<212> PRT

<213> Unknown

<220>

<223> Murine

<400> 10

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Thr Ala Asp Ala Arg Ala Leu Leu Ala Gly Gln Arg His Leu Leu Met
 1      5      10
Ala Gln Asp Glu Asn Gly Asp Thr Pro Leu His Leu Ala Ile Ile His
      20      25      30
Gly Gln Thr Gly Val Ile Glu Gln Ile Ala His Val Ile Tyr His Ala
      35      40      45
Gln Tyr Leu Gly Val Ile Asn Leu Thr Asn His Leu His Gln Thr Pro
      50      55      60
Leu His Leu Ala Val Ile Thr Gly Gln Thr Arg Val Val Ser Phe Leu
      65      70      75      80

```

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| | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Leu | Gln | Val | Gly | Ala | Asp | Pro | Thr | Leu | Leu | Asp | Arg | His | Gly | Asp | Ser | |
| | | | | 85 | | | | | 90 | | | | | 95 | | |
| Ala | Leu | His | Leu | Ala | Leu | Arg | Ala | Gly | Ala | Ala | Ala | Pro | Glu | Leu | Leu | |
| | | | 100 | | | | | 105 | | | | | 110 | | | |
| Gln | Ala | Leu | Leu | Arg | Ser | Gly | Ala | His | Ala | Val | Pro | Gln | Ile | Leu | His | |
| | | 115 | | | | 120 | | | | | | 125 | | | | |
| Met | Pro | Asp | Pro | Glu | Gly | Leu | Tyr | Pro | Val | His | Leu | Ala | Val | His | Ala | |
| | 130 | | | | | 135 | | | | | 140 | | | | | |
| Arg | Ser | Pro | Glu | Cys | Leu | Asp | Leu | Leu | Val | Asp | Cys | Gly | Ala | Glu | Val | |
| 145 | | | | 150 | | | | | | 155 | | | | | 160 | |
| Glu | Ala | Pro | Glu | Arg | Gln | Gly | Gly | Arg | Thr | Ala | Leu | His | Leu | Ala | Thr | |
| | | | | 165 | | | | | 170 | | | | | 175 | | |
| Glu | Met | Glu | Glu | Leu | Gly | Leu | Val | Thr | His | Leu | Val | Thr | Lys | Leu | His | |
| | | | 180 | | | | | 185 | | | | | 190 | | | |
| Ala | Asn | Val | Asn | Ala | Arg | Thr | Phe | Ala | Gly | Asn | Thr | Pro | Leu | His | Leu | |
| | 195 | | | | | | 200 | | | | | 205 | | | | |
| Ala | Ala | Gly | Leu | Gly | Ser | Pro | Thr | Leu | Thr | Arg | Leu | Leu | Leu | Lys | Ala | |
| | 210 | | | | | 215 | | | | | 220 | | | | | |
| Gly | Ala | Asp | Ile | His | Ala | Glu | Asn | Glu | Glu | Pro | Leu | Cys | Pro | Leu | | |
| 225 | | | | | 230 | | | | | 235 | | | | | | |

<210> 11

<211> 235

<212> PRT

<213> Unknown

<220>

<223> Murine

<400> 11

| | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Thr | Gly | Asp | Val | Lys | Met | Leu | Leu | Ala | Val | Gln | Arg | His | Leu | Thr | Ala | |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | | |
| Val | Gln | Asp | Glu | Asn | Gly | Asp | Ser | Val | Leu | His | Leu | Ala | Ile | Ile | His | |
| | | | 20 | | | | | 25 | | | | | 30 | | | |
| Leu | His | Ser | Gln | Leu | Val | Arg | Asp | Leu | Leu | Glu | Val | Thr | Ser | Gly | Leu | |
| | | 35 | | | | | 40 | | | | | 45 | | | | |
| Ile | Ser | Asp | Asp | Ile | Ile | Asn | Met | Arg | Asn | Asp | Leu | Tyr | Gln | Thr | Pro | |
| | 50 | | | | | 55 | | | | | 60 | | | | | |
| Leu | His | Leu | Ala | Val | Ile | Thr | Lys | Gln | Glu | Asp | Val | Val | Glu | Asp | Leu | |
| 65 | | | | | 70 | | | | | 75 | | | | | 80 | |
| Leu | Arg | Ala | Gly | Ala | Asp | Leu | Ser | Leu | Leu | Asp | Arg | Leu | Gly | Asn | Ser | |
| | | | | 85 | | | | | 90 | | | | | 95 | | |
| Val | Leu | His | Leu | Ala | Ala | Lys | Glu | Gly | His | Asp | Lys | Val | Leu | Ser | Ile | |
| | | | 100 | | | | | 105 | | | | | 110 | | | |
| Leu | Leu | Lys | His | Lys | Lys | Ala | Ala | Leu | Leu | Leu | Asp | His | Pro | Asn | Gly | |
| | | 115 | | | | 120 | | | | | | 125 | | | | |
| Asp | Gly | Leu | Gln | Ala | Ile | His | Leu | Ala | Met | Met | Ser | Asn | Ser | Leu | Pro | |
| | 130 | | | | | 135 | | | | | 140 | | | | | |
| Cys | Leu | Leu | Leu | Leu | Val | Ala | Ala | Gly | Ala | Asp | Val | Asn | Ala | Gln | Glu | |
| 145 | | | | | 150 | | | | | 155 | | | | | 160 | |
| Gln | Lys | Ser | Gly | Arg | Thr | Ala | Leu | His | Leu | Ala | Val | Glu | His | Asp | Asn | |
| | | | | 165 | | | | | 170 | | | | | 175 | | |
| Ile | Ser | Leu | Ala | Gly | Cys | Leu | Leu | Leu | Glu | Gly | Asp | Ala | His | Val | Asp | |
| | | | 180 | | | | | 185 | | | | | 190 | | | |
| Ser | Thr | Thr | Tyr | Asp | Gly | Thr | Thr | Pro | Leu | His | Ile | Ala | Ala | Gly | Arg | |
| | | 195 | | | | | 200 | | | | | 205 | | | | |

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| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Ser | Thr | Arg | Leu | Ala | Ala | Leu | Leu | Lys | Ala | Ala | Gly | Ala | Asp | Pro |
| 210 | | | | | | 215 | | | | | 220 | | | | |
| Leu | Val | Glu | Asn | Phe | Glu | Pro | Leu | Tyr | Asp | Leu | | | | | |
| 225 | | | | | 230 | | | | | 235 | | | | | |

<210> 12
 <211> 222
 <212> PRT
 <213> Unknown

<220>
 <223> Murine

<400> 12
 Trp Lys Gln Gln Leu Thr Glu Asp Gly Asp Ser Phe Leu His Leu Ala
 1 5 10 15
 Ile Ile His Glu Glu Lys Ala Leu Thr Met Glu Val Ile Arg Gln Val
 20 25 30
 Lys Gly Asp Leu Ala Phe Leu Asn Glu Gln Asn Asn Leu Gln Gln Thr
 35 40 45
 Pro Leu His Leu Ala Val Ile Thr Asn Gln Pro Glu Ile Ala Glu Ala
 50 55 60
 Leu Leu Gly Ala Gly Cys Asp Pro Glu Leu Arg Asp Phe Arg Gly Asn
 65 70 75 80
 Thr Pro Leu His Leu Ala Cys Glu Gln Gly Cys Leu Ala Ser Val Gly
 85 90 95
 Val Leu Thr Gln Ser Cys Thr Thr Pro His Leu His Ser Ile Leu Lys
 100 105 110
 Ala Thr Asn Tyr Asn Gly His Thr Cys Leu His Leu Ala Ser Ile His
 115 120 125
 Gly Tyr Leu Gly Ile Val Glu Leu Leu Val Ser Leu Gly Ala Asp Val
 130 135 140
 Asn Ala Gln Glu Pro Cys Asn Gly Arg Thr Ala Leu His Leu Ala Val
 145 150 155 160
 Asp Leu Gln Asn Pro Asp Leu Val Ser Leu Leu Leu Lys Cys Gly Ala
 165 170 175
 Asp Val Asn Arg Val Thr Tyr Gln Gly Tyr Ser Pro Tyr Gln Ile Thr
 180 185 190
 Trp Gly Arg Pro Ser Thr Arg Ile Gln Gln Gln Leu Gly Gln Leu Thr
 195 200 205
 Leu Glu Asn Leu Gln Met Leu Pro Glu Ser Glu Asp Glu Glu
 210 215 220